

REMARKS

This amendment responds to the Office Action mailed February 20, 2004.

Claims 1 and 3-20 are pending in the present application. Claims 1 and 13 have been amended and incorporate the limitations of claim 2, which has been canceled.

In paragraphs 1-18 of the Office Action, claims 1-2, 4-5, 8-9, 12-13, 15-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,176,453 to Long et al. (Long) in view of European Patent Application Publication No. EP0919647A1 to NEC Corporation (Okamoto). Applicants respectfully traverse these rejections.

Among the limitations of independent claims 1 and 13 which are neither disclosed nor suggested in the prior art of record is that a phase change substance comprises "a thickness in the range from about one to about thirty microns." This limitation originated in claim 2, which was previously searched, presented, and examined, and therefore does not require a new search. With the claimed phased-changed substance thickness, a simple configuration heat controller is formed having a light weight and a broad range of applications with an enhanced degree of freedom (flexibility). See Specification page 7, lines 3-21.

As admitted in paragraph 10 of the Office Action, neither Long nor Okamoto teaches a phase-changed substance comprising a thickness in the range of about 1 to about 30 microns. The Examiner acknowledges that Okamoto is "configured so as to form a light weight heat controlled device." However, in order to sufficiently remove heat from an object, and as the Examiner acknowledges, "Okamoto teaches in a specific example that the phase-changed material is suitably a several hundred micron thick film (column 3, section 17)." As is well known in the art, there must be sufficient material to conduct heat away from the object and to turn this heat into radiation. Okamoto does not teach that the phase-change material should be formed of a thin film, because a thin film would not have sufficient material to conduct heat away from the object and radiate the heat away. As

admitted, Okamoto does not disclose a lightweight base material that absorbs heat and radiates it away from an object, and acts as a lighter weight substitute for the denser phase-change substance. Accordingly, applicants respectfully submit that a prima facie case of obviousness has not been made, and that independent claims 1 and 13 patentably distinguish over the art of record.

Claims 3-12 and 14-20 depend either directly or indirectly from independent claims 1 and 13 and include all the limitations found therein. Each of these dependent claims include additional limitations which, in combination with the limitations of the claims from which they depend, are neither disclosed nor suggested in the prior art of record. Accordingly, these claims are likewise patentable.

In view of the foregoing, favorable consideration of the amendment to the claims and allowance of the present application is respectfully and earnestly solicited.

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Respectfully submitted,

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